Amendments to the Claims

This list of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1 (original): A system for non-invasively monitoring the operation and performance of an implanted cerebrospinal shunting system, comprising an implanted controller; said controller further comprising:

an inclination sensor;

a pressure sensor;

a wireless transceiver capable of communicating with an external programmer; and

an embedded microprocessor, capable of reading said inclination sensor and said pressure sensor and transmitting, using said wireless transceiver, said readings from said sensors;

a multi mode drainage system, in which a first mode is a low resistance substantially supine flow path and a second mode is a variable upright flow path, wherein the selection of said mode is controlled by said embedded microprocessor;

and an external programmer with wireless capability, said programmer capable of wireless communication with said controller.

Claim 2 (original): The system of claim 1, whereby said programmer can wirelessly transmit data and commands to said implanted controller, and whereby said controller can wirelessly transmit data and status responses to said programmer.

Claims 3-16 (cancelled)

Claim 17 (new): The system of claim 1, wherein said controller further comprises a memory element associated with said microprocessor, adapted to store microprocessor executable instructions.

Claim 18 (new): The system of claim 17, wherein said microprocessor executable instructions comprise a method of regularly monitoring cerebrospinal fluid shunt flow resistance, said steps comprising:

i. activating said implanted controller at a prescribed time;

ii. monitoring said inclination sensor in said controller to insure that the patient is in a supine position;

iii. measuring the initial pressure recorded by said pressure sensor;

iv. changing the drainage mode of said implanted controller to permit the cerebrospinal fluid to flow through said upright flow path, said change causing said pressure to increase;

v. monitoring said pressure sensor until the pressure reading exceeds said initial pressure by a predetermined amount;

vi. changing said drainage mode of said implanted controller to permit said cerebrospinal fluid to flow through said low resistance flow path; and

vii. measuring the elapsed time from said change to said low resistance flow path until said pressure sensor measures a pressure reading of said initial pressure plus one half of said amount.

Claim 19 (new): The system of claim 18, wherein said prescribed time occurs during said patient's typical sleep period.

Claim 20 (new): The system of claim 18, wherein said predetermined amount is in the range of 2-6 mm Hg.

Claim 21 (new): The system of claim 18, wherein said elapsed time is stored in said storage element.

Claim 22 (new): The system of claim 21, wherein said controller notifies said patient when said elapsed time changes significantly from said previously stored elapsed time.

Claim 23 (new): The system of claim 22, further comprising a piezo electric buzzer, wherein said controller notifies said patient by activating said piezo electric buzzer.

Claim 24 (new): The system of claim 21, wherein said stored elapsed times are transmitted wirelessly to said external programmer.

Claim 25 (new): A system for non-invasively monitoring the operation and performance of an implanted cerebrospinal shunting system, comprising an implanted controller; said controller further comprising:

an inclination sensor;

a pressure sensor;

a wireless transceiver capable of communicating with an external programmer; and

an embedded microprocessor, capable of reading said inclination sensor and said pressure sensor and transmitting, using said wireless transceiver, said readings from said sensors;

a memory element associated with said microprocessor adapted to store at least one diagnostic algorithm; and an external programmer with wireless capability, said programmer capable of wireless communication with said controller and adapted to perform at least one diagnostic test in conjunction with said controller.

Claim 26 (new): The system of claim 25, wherein said diagnostic test is selected from the group consisting of computation of the distal flow resistance of the shunt in the supine mode from the pressure sensor to the distal end of the shunt, computation of the supine flow rate, computation of the cranial compliance, computation of the proximal shunt flow resistance and regular monitoring of cerebrospinal fluid shunt flow resistance.

Amendments to the Drawings

The attached sheet of drawings includes a new drawing sheet containing Figure 6. This Figure illustrates the electronic components associated with the CSF controller. This Figure contains no new matter, as all of the information can be found in paragraph [0038].

Attachment: New drawing sheet